

## Life history notes on the No-brand Grass-yellow, *Eurema brigitta australis* (Stoll, 1780) Lepidoptera: Pieridae - Wesley Jenkinson

The No-brand Grass-yellow is encountered in the Northern Territory, and coastal and sub-coastal regions from north-eastern Queensland into southern New South Wales. Migration of this species occurs throughout its range depending on regional rainfall, temperature and suitable availability of its host plants.

In Queensland the species is encountered in a variety of habitats where the host plants are established. This includes grasslands, woodland, eucalypt open forest and occasionally in suburban gardens where suitable habitat is nearby.

The adults fly close to the ground amongst low growing herbs and grasses. When disturbed they can fly quite rapidly and can be difficult to follow. During cloudy conditions they settle on low growing shrubs and ground cover and resume flight when sunny conditions return. Both sexes occasionally feed from a variety of small native and introduced flowers.



Whilst in flight, the adults can be very easily confused with other species of the *Eurema* genus, particularly *E. herla* and *E. laeta*. Voucher specimens are best for correct identification. The males of this species do not have a sex brand (as the name implies). In fresh specimens the adults can be separated from other *Eurema* spp. by the presence of two very faint pale yellow (or pinkish yellow) streaks along the costal margin towards the forewing apex as pictured. The species also has wet and dry season forms.

The sexes are quite similar in appearance. In comparison to the males, the females are slightly paler yellow with more extensive black scaling across the wings. The black margin along the hind wing is also generally broken and is less extensive towards the tornus.

The average wingspan for the adults pictured is 38mm for both sexes.



*Eurema brigitta australis* (No-brand Grass-yellow)  
Images left to right: male, female, male underside, female underside



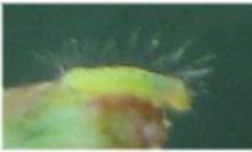
In January 2004 at Beaudesert, in south-eastern Queensland, a female was observed slowly fluttering around a host plant. Settling on the host plant with her wings closed, she curled her abdomen onto the upperside of a leaf and oviposited a single egg. This egg was kept for life history studies. Subsequently the larva was raised on a Fishbone Cassia (*Chamaecrista* sp.). The three confirmed host plants for this species are *C. concinna*, *C. maritima* and *C. nomame* (Moss, 2010).



This egg was pale yellow, spindle shaped with fine longitudinal ribs, approximately 0.5 mm wide x 1.5 mm high.

Freshly laid egg

When the first instar larva emerged the eggshell was consumed shortly afterwards. It was observed feeding during daylight hours and resting on the upperside of the host plant leaves. The later instars rested along stems of the host plant. The larva raised completed five instars and attained a length of 27mm.



1<sup>st</sup> instar larva



2<sup>nd</sup> instar larva



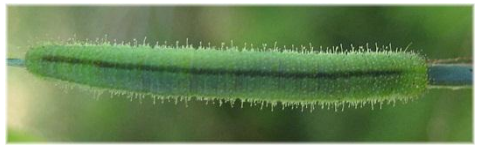
3<sup>rd</sup> instar larva



4<sup>th</sup> instar larva



5<sup>th</sup> instar larva lateral view



5<sup>th</sup> instar larva dorsal view



Pupa lateral view



Pupa lateral view



In captivity the pupa, measuring 16mm in length, was located below a stem of the host plant. It was attached with silk by the cremaster and a central girdle. The pupae occasionally have reddish-brown spots and markings as pictured.

The total time from egg to adult was three weeks, with egg duration of 3 days, larval duration 11 days and pupal duration of 7 days.

Within the new boundary of the Scenic Rim Regional Shire south of Brisbane, I have records of adults from November to April and one record for June. In this region the adults appear to be more numerous during the summer and autumn months. However, this relates to the timing of local rainfall triggering fresh growth of the host plants.

### References

- Braby, M.F., 2000. *Butterflies of Australia – Their Identification, Biology and Distribution*. vol 1. CSIRO Publishing, Melbourne.
- Moss, J.T. 2010. *Butterfly Host Plants of south-east Queensland and northern New South Wales*. 3<sup>rd</sup> edition, BOIC.

Photos Wesley Jenkinson

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### Getting more pixels - *Malcolm Tattersall*

In the last *Metamorphosis* of 2012, I compared image sizes and camera sensor sizes and concluded that most modern digital cameras will produce images of most insects which are satisfactory for most purposes. This time I will look at extending our range downwards, to get bigger images of tiny invertebrates close to us, and in the next issue I will talk about how to get better photos of larger but more distant subjects.

Wedding photographers have it easy: their subjects are all one to two metres tall and all one to ten metres away. By contrast, our invertebrate subjects can range from a tiny spider to an adult stick insect, or less than 0.2mm to more than 200mm in length, and 10cm to 10m or more away. That's an enormous range to cover - a size ratio of 1000:1 and a distance ratio of 100:1 - and our solutions this time have to be hardware rather than software.

### Small and close

Let's start with the small, close subjects. Suppose you have seen a 5mm bug sitting on a leaf a metre away. Your photo from that distance with a general-purpose camera and lens combination will show it as a dot in the middle of the frame (50-100px wide in a 5000px image). Obviously, your first decision is to move closer, but there are two kinds of limits:

- (1) The bug may take fright and jump away. Let's call this its *startle distance*. If the bug doesn't take fright, you keep moving in until ...

